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RESEARCH MEMORANDUM

EVALUATION OF GUST AND DRAFT VELOCITIES FROM FLIGHTS OF

P-61C AIRPLANES WITHIN THUNDERSTORMS

AUGUST 21, 1946 TO AUGUST 22, 1946

AT ORLANDO, FLORIDA

By

H. B. Tolefson

Langley Memorial Aeronautical Laboratory
Langley Field, Va.

**NATIONAL ADVISORY COMMITTEE
FOR AERONAUTICS**

WASHINGTON

NACA RM No. L6LO2a

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Tables I and II of this report summarize the gust and draft velocity data for thunderstorm flights 25 and 26 of August 21, 1946 and August 22, 1946, respectively. These data were evaluated from records of NACA instruments installed in P-61C airplanes and are of the type presented in reference 1 for previous flights.

Table III summarizes the readings of a milliammeter which was used in conjunction with other equipment to indicate ambient air temperature during thunderstorm surveys. These data were read from motion-picture records of the instrument and include all cases in which variations in the instrument indications were noted during the present flights.

Langley Memorial Aeronautical Laboratory
National Advisory Committee for Aeronautics
Langley Field, Va.

Harold B. Tolefson
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CGB

REFERENCE

1. Tolefson, H. B.: Evaluation of Gust and Draft Velocities from Flights of P-61c Airplanes within Thunderstorms. August 7, 1946 to August 13, 1946 at Orlando, Florida. NACA RM No. 16K16, 1946.

TABLE I.- SUMMARY OF GUST MEASUREMENTS FROM FLIGHTS
OF P-61C AIRPLANES WITHIN THUNDERSTORMS

Space interval ft $\times 10^3$	Pressure altitude (ft)	Maximum effective gust velocity $U_{e\max}$ (fps)	Maximum true gust velocity $U_{t\max}$ (fps)	Gust gradient distance (ft)	No. of gusts
August 21, 1946 - Flight 25					
Airplane 333 Traverse 1 <div> Time (EST) 160916 - 161415 Length of traverse 307.0 sec, 106,268 ft Initial heading (deg) - 170 </div>					
0 - 3	26,500	----	----	----	0
3 - 6		----	----	----	0
6 - 9		3.8	----	----	1
9 - 12		----	----	----	1
12 - 15		----	-6.3	----	3
15 - 18		----	----	----	1
18 - 21		3.8	----	6.5	2
21 - 24		6.7	----	3.8	1
24 - 27		----	----	-13.4	2
27 - 30	26,000	5.4	4.9	35	1
30 - 33		6.0	-6.7	----	2
33 - 36		5.4	----	----	2
36 - 39	26,500	----	----	----	4
39 - 42		4.8	-5.4	-12.0	4
42 - 45		----	----	----	1
45 - 48		2.5	----	----	3
48 - 51	26,000	6.7	11.3	144	2
51 - 54		6.0	----	----	2
54 - 57		7.0	----	----	1
57 - 60		2.5	----	----	2
60 - 63	26,500	3.5	----	----	3
63 - 66		3.5	-5.4	-8.9	2
66 - 69		----	-6.0	-14.2	2
69 - 72		3.5	----	----	4
72 - 75		7.9	----	----	2
75 - 78		----	----	----	0
78 - 81		4.4	3.8	181	1
81 - 84		----	----	----	0
84 - 87		----	----	----	0
87 - 90		----	----	----	2
90 - 93		----	----	----	1
93 - 96		----	----	----	1

TABLE I.- SUMMARY OF GUST MEASUREMENTS - Continued

Space interval ft $\times 10^3$	Pressure altitude (ft)	Maximum effective gust velocity $U_{e\max}$ (fps)	Maximum true gust velocity $U_{t\max}$ (fps)	Gust gradient distance (ft)	No. of gusts
August 21, 1946 - Flight 25					
Airplane 333 Traverse 1		{ Time (EST) 160916 - 161415 Length of traverse 307.0 sec, 106,268 ft Initial heading (deg) 170			
96 - 99	26,500	---	---	4.4	3
99 - 102		---	---	---	2
102 - 105		---	---	---	3
105 - 108		---	---	---	1
Airplane 333 Traverse 2		{ Time (EST) 162641 - (a) Length of traverse 413.0 sec, 144,872 ft Initial heading (deg) 240			
0 - 3	26,000	7.5	-6.3	---	5
3 - 6		13.2	-7.2	---	7
6 - 9		9.7	-17.9	20.7	5
9 - 12		17.2	-13.8	---	8
12 - 15		14.4	-6.3	---	3
15 - 18		---	-4.4	---	2
18 - 21	26,500	2.5	-6.0	---	4
21 - 24		3.1	---	---	1
24 - 27		---	---	---	1
27 - 30		7.8	---	8.9	2
30 - 33	26,000	---	---	---	0
33 - 36		---	---	---	0
36 - 39		---	---	---	0
39 - 42		---	---	---	0
42 - 45		4.4	-7.5	---	2
45 - 48		---	---	---	1
48 - 51		---	---	---	0
51 - 54		4.4	---	---	3
54 - 57		7.2	-4.4	---	3
57 - 60	26,500	---	---	---	0
60 - 63	26,000	4.4	---	---	2
63 - 66		6.3	---	---	1
66 - 69		---	-5.3	---	2
69 - 72		---	---	---	1

^aFilm supply for motion picture camera exhausted before end of traverse.

TABLE I.- SUMMARY OF GUST MEASUREMENTS - Continued

Space interval ft x 10 ³	Pressure altitude (ft)	Maximum effective gust velocity $U_{e\max}$ (fps)	Maximum true gust velocity $U_{t\max}$ (fps)	Gust gradient distance (ft)	No. of gusts	
August 21, 1945 - Flight 25						
Airplane 333 Traverse 2		Time (EST) 162041 - (a) Length of traverse 413.0 sec, 144,872 ft Initial heading (deg) 240				
72 - 75	26,000	---	---	---	1	
75 - 78		---	---	---	1	
78 - 81		---	---	---	1	
81 - 84		---	---	---	0	
84 - 87		4.7	-7.8	---	3	
87 - 90		---	---	---	1	
90 - 93		---	---	---	4	
93 - 96		---	---	---	2	
96 - 99		---	---	---	1	
99 - 102		---	---	---	0	
102 - 105		---	---	---	1	
105 - 108		---	---	---	1	
108 - 111		---	---	---	1	
111 - 114		4.7	---	3.8	132	2
114 - 117		---	---	---	---	0
117 - 120		---	---	---	---	0
120 - 123		---	---	---	---	1
123 - 126		---	---	---	---	1
126 - 129		---	---	---	---	0
129 - 132		---	---	---	---	0
132 - 135		---	---	---	---	0
135 - 138		---	---	---	---	0
138 - 141		4.4	---	---	---	1
141 - 144		---	---	---	---	0
144 - 147		---	---	---	---	0
Airplane 333 Traverse 3		Time (EST) 163938 - (a) Length of traverse 312.2 sec, 102,146 ft Initial heading (deg) 260				
0 - 3	26,000	---	---	---	0	
3 - 6		5.6	---	---	1	
6 - 9		---	---	---	0	

^aFilm supply for motion-picture camera exhausted before end of traverse.

TABLE I.- SUMMARY OF GUST MEASUREMENTS - Continued

Space interval ft $\times 10^3$	Pressure altitude (ft)	Maximum effective gust velocity $U_{e\max}$ (fps)	Maximum true gust velocity $U_{t\max}$ (fps)	Gust gradient distance (ft)	No. of gusts
August 21, 1946 - Flight 25					
Airplane 333 Traverse 3		Time (EST) 162938 - (a) Length of traverse 312.2 sec, 102,116 ft Initial heading (deg) 260			
9 - 12	26,000	---	---	---	0
12 - 15		---	---	---	0
15 - 18		---	---	---	1
18 - 21		---	---	---	0
21 - 24		4.7	---	---	1
24 - 27		---	---	---	1
27 - 30		---	---	---	2
30 - 33		---	---	---	1
33 - 36		---	---	---	1
36 - 39		---	---	---	0
39 - 42		---	---	---	1
42 - 45	25,500	4.3	---	---	2
45 - 48	25,000	3.4	-6.8	---	4
48 - 51		---	-4.3	-10.5	5
51 - 54		---	---	---	5
54 - 57	25,500	---	---	---	0
57 - 60	26,000	---	---	---	2
60 - 63		5.0	---	---	3
63 - 66		5.9	---	---	2
66 - 69	25,500	2.8	-5.6	---	5
69 - 72		6.5	---	---	3
72 - 75	26,000	2.8	---	-18.7	4
75 - 78		---	---	---	0
78 - 81		---	---	---	0
81 - 84		---	---	---	0
84 - 87		5.0	---	---	3
87 - 90		---	---	---	1
90 - 93		2.2	---	---	6
93 - 96		5.3	---	---	2
96 - 99		---	---	---	1
99 - 102		---	---	---	0
102 - 105		---	---	---	0

^aFilm supply for motion-picture camera exhausted before end of traverse.

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TABLE I.- SUMMARY OF GUST MEASUREMENTS - Continued

Space interval ft $\times 10^3$	Pressure altitude (ft)	Maximum effective gust velocity $U_{e\max}$ (fps)	Maximum true gust velocity $U_{t\max}$ (fps)	Gust gradient distance (ft)	No. of gusts
August 21, 1946 - Flight 25					
Airplane 333 Traverse 4		{ Time (EST) 164952 - 165242 Length of traverse 189.1 sec, 67,813 ft Initial heading (deg) 340			
0 - 3	26,000	---	---	---	0
3 - 6	26,500	---	---	---	0
6 - 9		---	---	---	0
9 - 12		---	---	---	0
12 - 15		---	---	---	0
15 - 18		---	---	---	0
18 - 21		---	---	---	1
21 - 24		---	---	---	1
24 - 27		---	---	---	0
27 - 30		4.3	---	---	2
30 - 33		3.1	5.5	74	3
33 - 36	27,000	2.5	---	---	5
36 - 39		3.4	---	---	2
39 - 42		---	---	---	1
42 - 45		---	-5.3	---	1
45 - 48		5.3	---	---	1
48 - 51		---	---	---	1
51 - 54		---	---	---	1
54 - 57		---	---	---	2
57 - 60		---	---	---	0
60 - 63		---	---	---	0
63 - 66		---	---	---	0
66 - 69		---	---	---	0
Airplane 331 Traverse 1		{ Time (EST) 161218 - 161819 Length of traverse 370.5 sec, 121,708 ft Initial heading (deg) 230			
0 - 3	20,500	3.5	-2.5	---	2
3 - 6	---	6.3	---	---	3
6 - 9		5.1	---	---	5
9 - 12		4.1	4.5	103	4
12 - 15		2.2	-3.5	6.7	33

TABLE I.- SUMMARY OF GUST MEASUREMENTS - Continued

Space interval ft $\times 10^3$	Pressure altitude (ft)	Maximum effective gust velocity $U_{e\max}$ (fps)	Maximum true gust velocity $U_{t\max}$ (fps)	Gust gradient distance (ft)	No. of gusts		
August 21, 1946 - Flight 25							
Airplane 331 Traverse 1		Time (EST) 161218 - 161819 Length of traverse 370.5 sec, 121,708 ft Initial heading (deg) 230					
15 - 18	20,500	3.2	-----	-----	-----	2	
18 - 21		2.2	-----	-----	-----	2	
21 - 24		-----	-1.9	-----	-----	3	
24 - 27		-----	-----	-----	-----	1	
27 - 30		-----	-----	-----	-----	2	
30 - 33		-----	-----	-----	-----	3	
33 - 36		-----	-6.3	-----	-----	4	
36 - 39		4.4	-4.7	-----	-----	4	
39 - 42		4.7	-4.7	-----	-----	4	
42 - 45		4.1	-2.2	-----	-----	4	
45 - 48		-----	-1.6	-----	-----	2	
48 - 51		-----	-2.2	-----	-----	1	
51 - 54		-----	-----	-----	-----	1	
54 - 57		3.5	-2.8	-----	-----	8	
57 - 60		4.7	-2.2	7.2	81	4	
60 - 63		-----	-5.4	-----	-5.8	64	3
63 - 66		2.8	-2.8	-----	-----	-----	3
66 - 69		-----	-----	-----	-----	-----	3
69 - 72		2.8	-----	-----	-----	-----	1
72 - 75		2.5	-----	-----	-----	-----	2
75 - 78		2.5	-----	-----	-----	-----	3
78 - 81		3.5	-3.5	-----	-3.6	101	3
81 - 84		-----	-----	-----	-----	-----	1
84 - 87		3.5	-4.7	-----	-----	-----	2
87 - 90		2.2	-----	-----	-----	-----	3
90 - 93		-----	-2.8	-----	-----	-----	1
93 - 96		3.5	-2.2	-----	-----	-----	2
96 - 99		-----	-----	-----	-----	-----	0
99 - 102		-----	-----	-----	-----	-----	0
102 - 105		4.1	-----	-----	-----	-----	1
105 - 108		-----	-----	-----	-----	-----	3
108 - 111		4.7	-2.8	-----	-----	-----	3
111 - 114		2.8	-2.2	-----	-----	-----	4
114 - 117		5.7	-8.2	7.2	63	-----	7
117 - 120		3.2	-4.2	-----	-----	-----	3
120 - 123		2.8	-5.1	16.4	78	-----	3

TABLE I.- SUMMARY OF GUST MEASUREMENTS - Continued

Space interval ft $\times 10^3$	Pressure altitude (ft)	Maximum effective gust velocity $U_{e\max}$ (fps)	Maximum true gust velocity $U_{t\max}$ (fps)	Gust gradient distance (ft)	No. of gusts
August 21, 1946 - Flight 25					
Airplane 347 Traverse 1		Time (EST) - (b) Length of traverse 233.5 sec, 77,738 ft Initial heading (deg) 210			
0 - 3	14,500	---	---	---	0
3 - 6		7.5	---	---	0
6 - 9		---	-5.0	---	3
9 - 12		1.9	-2.2	---	3
12 - 15		---	-5.6	-6.4	1
15 - 18		9.6	-4.7	14.9	7
18 - 21		5.9	-6.2	10.5	4
21 - 24		---	---	---	2
24 - 27		4.7	-4.7	-7.5	7
27 - 30		---	---	---	0
30 - 33		2.5	---	---	2
33 - 36	15,000	3.4	-2.5	---	2
36 - 39		3.1	-3.7	-5.6	4
39 - 42		6.2	-5.9	5.9	4
42 - 45		7.8	-4.0	5.8	5
45 - 48		---	-4.0	---	5
48 - 51		2.8	-5.0	---	3
51 - 54		9.0	-7.5	-11.3	6
54 - 57		6.8	-8.4	---	3
57 - 60		3.4	-5.9	12.5 -20.0	5
60 - 63	14,500	7.1	-11.5	194	5
63 - 66	14,000	---	---	---	0
66 - 69		---	-4.0	---	4
69 - 72		3.4	---	---	2
72 - 75		---	---	---	0
75 - 78		---	---	---	0

^bClock not in field of view of motion-picture camera.

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TABLE I.- SUMMARY OF GUST MEASUREMENTS - Continued

Space interval ft $\times 10^3$	Pressure altitude (ft)	Maximum effective gust velocity $U_{e\max}$ (fps)	Maximum true gust velocity $U_{t\max}$ (fps)	Gust gradient distance (ft)	No. of gusts
August 21, 1946 - Flight 25					
Airplane 347 Traverse 2		Time (EST) - (b) Length of traverse 193.0 sec, 65,037 ft Initial heading (deg) 340			
0 - 3	16,500	---	---	---	0
3 - 6		7.8	-13.0	---	8
6 - 9		13.6	-11.2	---	8
9 - 12		15.5	-9.0	---	6
12 - 15		18.3	-11.2	---	4
15 - 18		24.2	-21.7	---	6
18 - 21	17,000	14.0	-20.2	38.7	6
21 - 24		16.1	-8.4	---	5
24 - 27		8.7	-5.9	---	9
27 - 30		11.5	-3.4	22.6	5
30 - 33		---	---	---	0
33 - 36		---	---	---	0
36 - 39		---	---	---	0
39 - 42		---	-2.2	---	1
42 - 45		---	---	---	0
45 - 48		---	---	---	0
48 - 51		---	---	---	0
51 - 54		---	---	---	0
54 - 57		---	---	---	0
57 - 60	17,500	---	-8.4	---	2
60 - 63		---	---	---	0
63 - 66		---	---	---	0
Airplane 347 Traverse 3		Time (EST) - (b) Length of traverse 481.7 sec, 156,086 ft Initial heading (deg) 130			
0 - 3	13,500	3.4	---	6.0	1
3 - 6		3.1	---	7.3	2
6 - 9		6.7	-5.8	---	5
9 - 12	14,000	3.7	-4.3	---	2
12 - 15		---	-5.2	---	4

^b Clock not in field of view of motion-picture camera.

TABLE I.- SUMMARY OF GUST MEASUREMENTS - Continued

Space interval ft $\times 10^3$	Pressure altitude (ft)	Maximum effective gust velocity $U_{e\max}$ (fps)	Maximum true gust velocity $U_{t\max}$ (fps)	Gust gradient distance (ft)	No. of gusts
August 21, 1946 - Flight 25					
Airplane 347 Traverse 3		Time (EST) - (b) Length of traverse 481.7 sec, 156,086 ft Initial heading (deg) 130			
15 - 18	14,000	5.2	-1.8	---	4
18 - 21		---	-3.7	---	2
21 - 24		3.4	-2.4	---	5
24 - 27		2.4	-3.1	6.9	3
27 - 30		2.4	-2.4	7.0	4
30 - 33	14,500	4.6	-2.4	6.4	3
33 - 36		7.6	-8.6	---	3
36 - 39		5.2	-2.4	4.1	2
39 - 42		3.7	-3.1	---	3
42 - 45		6.1	-2.4	---	3
45 - 48		---	-5.2	---	4
48 - 51		5.2	-7.0	-10.5	4
51 - 54		5.5	-2.4	12.1	5
54 - 57		2.8	---	---	1
57 - 60		---	-2.4	---	3
60 - 63		---	---	---	0
63 - 66		---	---	---	0
66 - 69	15,000	4.9	-3.4	---	2
69 - 72	15,500	5.5	-3.4	12.8	3
72 - 75		2.1	-2.4	5.6	3
75 - 78		---	-4.0	---	2
78 - 81		5.8	-3.1	-5.4	5
81 - 84		22.3	-9.5	---	6
84 - 87		10.1	-15.0	---	7
87 - 90		19.0	-23.9	29.1	5
90 - 93		7.6	---	---	1
93 - 96		3.1	-2.4	---	2
96 - 99		4.6	---	7.1	1
99 - 102		15.0	-4.3	---	2
102 - 105		6.4	-11.0	---	8
105 - 108		13.8	-9.8	---	5
108 - 111		6.1	-2.4	---	4
111 - 114		13.8	-8.0	---	6

^bClock not in field of view of motion-picture camera.

TABLE I.- SUMMARY OF GUST MEASUREMENTS - Continued

Space interval ft $\times 10^3$	Pressure altitude (ft)	Maximum effective gust velocity $U_{e\max}$ (fps)	Maximum true gust velocity $U_{t\max}$ (fps)	Gust gradient distance (ft)	No. of gusts		
August 21, 1946 - Flight 25							
Airplane 347 Traverse 3		Time (EST) - (b) Length of traverse 481.7 sec, 156,086 ft Initial heading (deg) 130					
114 - 117	16,000	4.3	-13.8	---	9		
117 - 120		---	---	---	0		
120 - 123		---	---	---	0		
123 - 126		3.7	-2.1	---	2		
126 - 129		4.6	---	---	1		
129 - 132		---	---	---	0		
132 - 135		3.1	---	5.7	269	1	
135 - 138		---	---	---	---	0	
138 - 141		---	---	---	---	0	
141 - 144		---	---	---	---	0	
144 - 147		---	---	---	---	0	
147 - 150		21.1	---	---	---	1	
150 - 153		---	---	---	---	0	
153 - 156		---	---	---	---	0	
Airplane 347 Traverse 4		Time (EST) - (b) Length of traverse 224.4 sec, 73,186 ft Initial heading (deg) 330					
0 - 3	16,000	---	---	---	0		
3 - 6		---	---	---	0		
6 - 9		6.7	-6.4	5.6	338	3	
9 - 12	16,500	7.6	-4.6	5.1	69	10	
12 - 15		5.5	-3.6	---	-8.3	102	5
15 - 18		2.7	-5.8	---	-9.1	397	4
18 - 21		13.7	-13.4	---	---	---	4
21 - 24		20.1	-8.8	---	---	---	5
24 - 27		20.7	-15.5	---	---	---	10
27 - 30		9.7	-20.7	---	---	---	7
30 - 33		6.4	-1.8	---	---	---	2
33 - 36		5.2	-4.6	---	---	---	3
36 - 39		3.3	-2.4	5.2	---	65	8
39 - 42		4.3	-6.4	---	---	---	3

^bClock not in field of view of motion-picture camera.

TABLE I.- SUMMARY OF GUST MEASUREMENTS - Continued

Space interval ft $\times 10^3$	Pressure altitude (ft)	Maximum effective gust velocity $U_{e\max}$ (fps)		Maximum true gust velocity $U_{t\max}$ (fps)		Gust gradient distance (ft)	No. of gusts
August 21, 1946 - Flight 25							
Airplane 347 Traverse 4		{ Time (EST) - (b) Length of traverse 224.4 sec, 73,186 ft Initial heading (deg) 330					
42 - 45	16,500	3.3	-7.3	8.3	-----	230	9
45 - 48		4.3	-7.4	-----	-----	-----	4
48 - 51		-----	-1.5	-----	-----	-----	1
51 - 54		-----	-----	-----	-----	-----	0
54 - 57		-----	-3.3	-----	-6.1	258	1
57 - 60	17,000	-----	-----	-----	-----	-----	0
60 - 63		-----	-----	-----	-----	-----	0
63 - 66		-----	-----	-----	-----	-----	0
66 - 69		-----	-----	-----	-----	-----	0
69 - 72		-----	-2.1	-----	-----	-----	1
72 - 75		3.0	-----	-----	-----	-----	1
Airplane 351 Traverse 1		{ Time (EST) 155937 - (a) Length of traverse 351.7 sec, 108,601 ft Initial heading (deg) 200					
0 - 3	11,000	4.5	-----	5.3	-----	61	2
3 - 6		-----	-----	-----	-----	-----	0
6 - 9		6.4	-----	4.9	-----	89	2
9 - 12		-----	-----	-----	-----	-----	0
12 - 15		4.8	-6.1	4.8	-----	120	5
15 - 18		6.4	-5.4	-----	-----	-----	2
18 - 21		2.9	-5.4	-----	-----	-----	2
21 - 24		7.0	-----	7.8	-----	299	1
24 - 27		-----	-----	-----	-----	-----	0
27 - 30		6.7	-----	-----	-----	-----	1
30 - 33		6.1	-5.4	-----	-----	-----	4
33 - 36		8.6	-----	-----	-----	-----	2
36 - 39		5.7	-----	-----	-----	-----	1

^aFilm supply for motion-picture camera exhausted before end of traverse.

^bClock not in field of view of motion-picture camera.

TABLE I.- SUMMARY OF GUST MEASUREMENTS - Continued

Space interval ft x 10 ³	Pressure altitude (ft)	Maximum effective gust velocity $U_{e_{max}}$ (fps)	Maximum true gust velocity $U_{t_{max}}$ (fps)	Gust gradient distance (ft)	No. of gusts
August 21, 1946 - Flight 25					
Airplane 351 { Time (EST) 155937 - (a) Traverse 1 { Length of traverse 361.7 sec, 108,601 ft { Initial heading (deg) 200					
39 - 42	11,000	4.5	-----	-----	1
42 - 45		7.7	-6.1	-----	2
45 - 48		8.3	-----	16.8	1
48 - 51		10.5	-18.2	6.8 -11.7	4
51 - 54		10.5	-5.4	-----	4
54 - 57		5.4	-6.1	-----	6
57 - 60		7.0	-7.3	11.6	3
60 - 63		10.2	-10.2	-----	4
63 - 66		20.4	-7.3	-----	7
66 - 69		6.1	-15.6	41.7 -23.2	5
69 - 72	11,500	13.1	-9.9	13.7	7
72 - 75		10.5	-12.8	-----	7
75 - 78		4.1	-5.4	-----	4
78 - 81		-----	-----	-----	0
81 - 84		8.6	-5.4	8.7	4
84 - 87		-----	-----	-----	0
87 - 90		-----	-----	-----	0
90 - 93		2.6	-----	-----	1
93 - 96		-----	-----	-----	0
96 - 99		5.7	-----	-----	1
99 - 102		5.7	-5.1	-----	3
102 - 105		9.2	-----	16.8	1
105 - 108		3.8	-----	-----	3
108 - 111		4.5	-----	-----	1

^a Film supply for motion-picture camera exhausted before end of traverse.

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TABLE I.- SUMMARY OF GUST MEASUREMENTS - Continued

Space interval ft $\times 10^3$	Pressure altitude (ft)	Maximum effective gust velocity $U_{e_{max}}$ (fps)	Maximum true gust velocity $U_{t_{max}}$ (fps)	Gust gradient distance (ft)	No. of gusts
August 21, 1946 - Flight 25					
Airplane 351 Traverse 2		Time (EST) 161608 - (a) Length of traverse 305.3 sec, 96,681 ft Initial heading (deg.) 340			
0 - 3	11,500	14.5 -13.6	---- -16.2	---- 172	10
3 - 6		17.1 -6.6	26.9 -10.6	318 32	8
6 - 9		22.1 ----	15.7 ----	93 ----	3
9 - 12		5.4 -7.6	8.1 ----	269 ----	2
12 - 15		4.4 -14.5	---- -30.0	---- 60	6
15 - 18		10.4 -9.8	14.6 ----	178 ----	6
18 - 21		4.1 -19.0	---- ----	----	4
21 - 24		6.0 -5.7	8.4 ----	159 ----	4
24 - 27		14.9 -8.5	---- -19.8	---- 229	3
27 - 30		8.8 -7.9	---- ----	----	6
30 - 33		5.7 -9.2	8.5 -8.4	198 160	5
33 - 36		3.8 ----	7.4 ----	224 ----	2
36 - 39		---- -10.4	---- -9.2	---- 244	5
39 - 42		9.2 -12.0	---- -22.0	---- 98	4
42 - 45	11,000	5.4 ----	17.2 ----	401 ----	2
45 - 48		---- -4.1	----	----	1
48 - 51		3.5 -5.1	---- -9.4	---- 165	2
51 - 54		---- -5.1	----	----	1
54 - 57		4.1 ----	4.7 ----	195 ----	1
57 - 60		---- -4.4	----	----	2
60 - 63		4.4 -4.4	----	----	2
63 - 66		----	----	----	0
66 - 69		2.8 ----	----	----	1
69 - 72		2.5 -7.0	----	----	2
72 - 75		----	----	----	0
75 - 78		3.8 ----	7.9 ----	31 ----	2
78 - 81		---- -5.4	----	----	2
81 - 84		2.2 ----	----	----	1
84 - 87		4.4 ----	----	----	1
87 - 90		---- -5.4	---- -17.7	---- 31	2
90 - 93		7.9 -8.8	14.1 ----	122 ----	5
93 - 96		5.4 -9.2	8.6 -14.4	60 244	3
96 - 99		---- -3.8	----	----	1

*Film supply for motion-picture camera exhausted before end of traverse.

TABLE I.- SUMMARY OF GUST MEASUREMENTS - Continued

Space interval ft $\times 10^3$	Pressure altitude (ft)	Maximum effective gust velocity $U_{e_{max}}$ (fps)	Maximum true gust velocity $U_{t_{max}}$ (fps)	Gust gradient distance (ft)	No. of gusts
August 21, 1946 - Flight 25					
Airplane 351 Traverse 3					
Time (EST) 163017 - (a) Length of traverse 438.1 sec, 118,387 ft Initial heading (deg) 160					
0 - 3	11,000	4.4	----	----	1
3 - 6		-----	-6.3	----	3
6 - 9		11.9	-6.3	15.8	5
9 - 12		4.4	-4.1	----	3
12 - 15		4.4	----	----	1
15 - 18		6.6	----	7.7	2
18 - 21		-----	-4.7	-----	2
21 - 24		-----	-6.6	-----	2
24 - 27		7.5	-6.6	9.3	4
27 - 30		-----	-----	-----	0
30 - 33		3.1	-----	-----	1
33 - 36		-----	-----	-----	0
36 - 39		-----	-2.2	-----	1
39 - 42		-----	-----	-----	0
42 - 45		5.6	-----	-----	1
45 - 48		-----	-----	-----	0
48 - 51		3.1	-----	-----	1
51 - 54		7.2	-5.6	-----	3
54 - 57		-----	-----	-----	0
57 - 60		-----	-4.1	-----	1
60 - 63		2.5	-----	5.7	1
63 - 66		2.8	-----	4.6	1
66 - 69		-----	-----	-----	0
69 - 72		-----	-----	-----	0
72 - 75		6.3	-6.9	-----	3
75 - 78		7.2	-10.0	20.8	7
78 - 81		14.4	-10.7	17.2	6
81 - 84		18.8	-18.5	26.1	7
84 - 87	10,500	6.0	-11.0	-----	5
87 - 90		8.5	-15.7	-----	6
90 - 93		16.0	-4.7	-----	8

^aFilm supply for motion-picture camera exhausted before end of traverse.

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TABLE I.- SUMMARY OF GUST MEASUREMENTS - Continued

Space interval ft x 10 ³	Pressure altitude (ft)	Maximum effective gust velocity $U_{e\max}$ (fps)		Maximum true gust velocity $U_{t\max}$ (fps)		Gust gradient distance (ft)		No. of gusts
August 21, 1946 - Flight 25								
Airplane 351 Traverse 3		{ Time (EST) 163017 - (a) Length of traverse 438.1 sec, 118,387 ft Initial heading (deg) 160						
93 - 96	10,500	9.4	-5.3	----	----	----	----	3
96 - 99		----	-4.1	----	-6.8	----	138	1
99 - 102	11,000	----	----	----	----	----	----	0
102 - 105		----	-6.0	----	----	----	----	1
105 - 108		12.2	-9.1	----	----	----	----	7
108 - 111	10,500	7.8	-10.0	----	----	----	----	5
111 - 114		6.0	-9.7	----	-14.6	----	220	7
114 - 117		11.0	-12.2	----	-33.0	----	122	4
117 - 120		17.9	-12.2	----	-17.5	----	96	7
120 - 123		12.9	-10.3	----	-26.4	----	92	5
123 - 126		----	----	----	----	----	----	0
Airplane 351 Traverse 4		{ Time (EST) 163931 - (a) Length of traverse 439.5 sec, 123,041 ft Initial heading (deg) 360						
0 - 3	11,000	20.9	-15.0	----	-13.3	----	153	5
3 - 6		12.5	-7.2	10.2	----	156	----	6
6 - 9		11.9	-6.9	10.2	----	133	----	4
9 - 12		6.2	-6.9	----	----	----	----	6
12 - 15		7.5	-6.2	17.6	-18.7	75	156	3
15 - 18		----	-6.5	----	----	----	----	1
18 - 21		----	----	----	----	----	----	0
21 - 24		----	----	----	----	----	----	0
24 - 27		----	----	----	----	----	----	0
27 - 30		----	----	----	----	----	----	0
30 - 33		----	----	----	----	----	----	0
33 - 36		----	-4.1	----	----	----	----	2
36 - 39		6.9	-5.9	----	----	----	----	3
39 - 42		6.9	-7.5	----	----	----	----	4
42 - 45		8.1	-6.5	9.2	----	78	----	7

^aFilm supply for motion-picture camera exhausted before end of traverse.

TABLE I.- SUMMARY OF GUST MEASUREMENTS - Continued

Space interval ft x 10 ³	Pressure altitude (ft)	Maximum effective gust velocity $U_{e_{max}}$ (fps)	Maximum true gust velocity $U_{t_{max}}$ (fps)	Gust gradient distance (ft)	No. of gusts
August 21, 1946 - Flight 25					
Airplane 351 Traverse 4		Time (EST) 163931 - (a) Length of traverse 439.5 sec, 123,041 ft Initial heading (deg) 360			
45 - 48	11,000	----	-8.4	----	2
48 - 51		8.7	+5.9	----	6
51 - 54		8.1	-5.6	13.9	3
54 - 57		----	----	----	0
57 - 60		3.1	----	----	1
60 - 63		----	-4.1	----	1
63 - 66		----	----	----	0
66 - 69		----	----	----	0
69 - 72		----	----	----	0
72 - 75		----	----	----	0
75 - 78		4.7	----	----	3
78 - 81		----	-4.7	-6.3	1
81 - 84		----	----	----	0
84 - 87		----	----	----	0
87 - 90		----	----	----	0
90 - 93		----	----	----	0
93 - 96		4.1	-4.7	----	3
96 - 99		----	----	----	0
99 - 102		4.1	----	----	1
102 - 105		----	----	----	0
105 - 108		----	----	----	0
108 - 111		----	-3.1	----	1
111 - 114		----	----	----	0
114 - 117		5.6	-9.0	----	4
117 - 120		3.7	----	----	1
120 - 123		----	----	----	0
123 - 126		----	----	----	0

^aFilm supply for motion-picture camera exhausted before end of traverse.

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TABLE I.- SUMMARY OF GUST MEASUREMENTS - Continued

Space interval ft x 10 ³	Pressure altitude (ft)	Maximum effective gust velocity $U_{e_{max}}$ (fps)	Maximum true gust velocity $U_{t_{max}}$ (fps)	Gust gradient distance (ft)	No. of gusts
August 22, 1946 - Flight 26					
Airplane 333 Traverse I		Time (EST) 144708 - 145055 Length of traverse 238.6 sec, 96,032 ft Initial heading (deg) 70			
0 - 3	26,500	---	---	---	0
3 - 6		---	---	---	0
6 - 9		---	---	---	0
9 - 12		---	---	---	0
12 - 15		---	---	---	0
15 - 18		---	---	---	0
18 - 21		9.8	---	---	1
21 - 24		3.8	---	---	1
24 - 27		6.4	-2.2	---	2
27 - 30		7.6	---	---	1
30 - 33		11.4	---	---	3
33 - 36		12.7	-12.1	---	7
36 - 39	27,000	7.6	-10.8	---	7
39 - 42		14.9	-9.8	---	4
42 - 45		14.6	-6.7	---	3
45 - 48		14.6	-7.0	---	3
48 - 51		20.3	-14.6	---	5
51 - 54		9.5	---	27.3	2
54 - 57		12.1	-4.8	---	4
57 - 60		6.7	-7.9	31.8	6
60 - 63		10.2	-4.8	---	6
63 - 66		11.4	---	21.6	4
66 - 69		11.4	-4.4	---	4
69 - 72		8.9	-7.0	---	4
72 - 75		8.9	---	---	2
75 - 78		15.2	---	30.8	2
78 - 81		---	-6.7	---	1
81 - 84		7.6	-4.4	---	3
84 - 87	26,500	6.7	---	---	2
87 - 90		7.3	-7.0	9.5	2
90 - 93		4.4	-6.7	---	2
93 - 96		7.0	-5.4	13.1	4
96 - 99		---	---	---	0

TABLE I.- SUMMARY OF GUST MEASUREMENTS - Continued

Space interval ft x 10 ³	Pressure altitude (ft)	Maximum effective gust velocity $U_{e_{max}}$ (fps)	Maximum true gust velocity $U_{t_{max}}$ (fps)	Gust gradient distance (ft)	No. of gusts		
August 22, 1946 - Flight 26							
Airplane 333 Traverse 2		Time (EST) 150049 - 150437 Length of traverse 245.5 sec, 100,301 ft Initial heading (deg) 200					
0 - 3	26,000	7.6	-5.0	18.9	80	3	
3 - 6		6.0	-7.2	-----	21.0	2	
6 - 9		7.6	-5.0	13.5	60	4	
9 - 12		3.8	-7.6	-----	-----	2	
12 - 15		7.6	-----	-----	-----	2	
15 - 18		6.0	-3.5	-----	-----	2	
18 - 21		5.7	-3.8	14.2	123	4	
21 - 24		11.0	-5.7	-----	-----	2	
24 - 27		7.2	-3.8	-----	-8.6	41	7
27 - 30		6.0	-----	-----	-----	1	
30 - 33		3.8	-----	-----	-----	1	
33 - 36		6.3	-----	14.4	194	1	
36 - 39		-----	-3.8	-----	-----	1	
39 - 42		6.0	-----	-----	-----	1	
42 - 45		18.3	-3.5	-----	-----	2	
45 - 48		15.1	-16.7	21.6	84	9	
48 - 51		3.8	-4.4	-----	-----	3	
51 - 54		12.6	-2.8	13.2	-13.5	164	122
54 - 57	26,500	11.7	-3.8	-----	-----	6	
57 - 60		7.6	-7.2	-----	-14.3	40	10
60 - 63		10.7	-7.2	17.4	-19.8	39	40
63 - 66		9.4	-17.3	-----	-18.4	82	6
66 - 69		7.2	-----	-----	-----	2	
69 - 72		5.4	-5.0	13.0	82	5	
72 - 75		13.2	-3.8	21.1	246	7	
75 - 78		14.5	-6.9	-----	-----	7	
78 - 81		7.2	-6.9	-----	-17.2	81	6
81 - 84	27,000	13.2	-6.9	-----	-----	6	
84 - 87		18.0	-9.1	-----	-----	5	
87 - 90		17.0	-17.3	-----	-----	5	
90 - 93	27,500	15.7	-13.9	-----	-----	10	
93 - 96	28,000	15.4	-17.6	23.8	-32.5	81	161
96 - 99	28,500	-----	-----	-----	-----	0	
99 - 102		-----	-----	-----	-----	0	

TABLE I.- SUMMARY OF GUST MEASUREMENTS - Continued

Space interval ft. x 10 ³	Pressure altitude (ft)	Maximum effective gust velocity $U_{e_{max}}$ (fps)	Maximum true gust velocity $U_{t_{max}}$ (fps)	Gust gradient distance (ft)	No. of gusts
August 22, 1946 - Flight 26					
Airplane 333 Traverse 3		Time (EST) 151735 - 152202 Length of traverse 289.2 sec, 113,804 ft Initial heading (deg) 70			
0 - 3	26,500	----	----	----	0
3 - 6		----	----	----	0
6 - 9		12.8 -13.1	----	----	4
9 - 12		15.6 -8.4	34.0 -13.4	418 38	8
12 - 15	26,000	----- -7.5	-----	-----	2
15 - 18		12.2 -3.7	-----	-----	6
18 - 21		10.6 -----	-----	-----	2
21 - 24	26,500	14.3 -6.9	-----	-----	4
24 - 27	27,000	10.3 -2.5	-----	-----	3
27 - 30	27,500	7.5 -11.2	-----	-----	6
30 - 33	28,000	19.3 -----	-----	-----	4
33 - 36	28,500	6.5 -4.1	----- -18.9	----- 107	4
36 - 39	29,000	2.8 -24.9	----- -23.8	----- 142	5
39 - 42		18.7 -17.4	-----	-----	2
42 - 45		21.2 -8.4	-----	-----	4
45 - 48	28,500	13.4 -5.6	-----	-----	3
48 - 51		15.9 -5.3	-----	-----	3
51 - 54	28,000	----- -5.0	-----	-----	2
54 - 57	28,500	12.8 -8.4	-----	-----	3
57 - 60		2.5 -6.5	-----	-----	7
60 - 63		8.4 -7.2	-----	-----	3
63 - 66	28,000	11.2 -4.1	-----	-----	3
66 - 69		4.7 -----	-----	-----	3
69 - 72		4.4 -----	-----	-----	1
72 - 75		4.4 -6.2	----- -11.6	----- 211	4
75 - 78	27,500	10.6 -3.4	-----	-----	3
78 - 81		4.4 -----	-----	-----	3
81 - 84		5.3 -----	-----	-----	1
84 - 87		7.2 -6.5	-----	-----	7
87 - 90		5.3 -----	-----	-----	1
90 - 93		7.5 -----	15.0 -----	61 -----	1
93 - 96		3.7 -----	-----	-----	1

TABLE I.- SUMMARY OF GUST MEASUREMENTS - Continued

Space interval ft x 10 ³	Pressure altitude (ft)	Maximum effective gust velocity $U_{e_{max}}$ (fps)	Maximum true gust velocity $U_{t_{max}}$ (fps)	Gust gradient distance (ft)	No. of gusts		
August 22, 1946 - Flight 26							
Airplane 333 Traverse 3	Time (EST) 151735 - 152202 Length of traverse 289.2 sec, 113,804 ft Initial heading (deg) 70						
96 - 99	27,500	----	----	----	0		
99 - 102		----	----	----	0		
102 - 105		7.2	----	----	1		
105 - 108		4.7	----	----	2		
108 - 111		----	-5.9	----	1		
111 - 114		----	----	----	0		
Airplane 333 Traverse 4	Time (EST) 152850 - 153330 Length of traverse 291.0 sec, 115,785 ft Initial heading (deg) 70						
0 - 3	26,000	----	----	----	0		
3 - 6		----	----	----	0		
6 - 9		----	----	----	0		
9 - 12		----	----	----	0		
12 - 15		5.9	12.7	81	2		
15 - 18		3.7	----	----	1		
18 - 21		8.7	-3.4	----	3		
21 - 24		7.4	-8.7	9.2	81	5	
24 - 27		11.1	----	----	----	3	
27 - 30		2.2	-7.4	----	-9.3	39	4
30 - 33		3.7	----	----	----	1	
33 - 36		3.7	----	----	----	1	
36 - 39	26,500	3.7	-3.7	----	4		
39 - 42		5.3	-6.5	----	6		
42 - 45		4.6	-7.1	----	4		
45 - 48		5.3	-3.7	----	2		
48 - 51	26,000	2.8	-2.8	----	2		
51 - 54		3.4	-5.6	----	9		
54 - 57		9.0	-3.4	21.1	252	5	
57 - 60		4.9	-6.8	----	----	5	
60 - 63		10.5	-7.4	----	----	4	

TABLE I.- SUMMARY OF GUST MEASUREMENTS - Continued

Space interval ft x 10 ³	Pressure altitude (ft)	Maximum effective gust velocity $U_{e\max}$ (fps)	Maximum true gust velocity $U_{t\max}$ (fps)	Gust gradient distance (ft)	No. of gusts
August 22, 1946 - Flight 26					
Airplane 333 Traverse 4		Time (EST) 152850 - 153330 Length of traverse 291.0 sec, 115,785 ft Initial heading (deg) 70			
63 - 66	26,000	6.2	4.3	---	5
66 - 69		17.0	-7.4	---	4
69 - 72		5.9	-7.1	---	5
72 - 75	25,500	7.4	---	---	2
75 - 78	25,000	5.3	-9.9	---	3
78 - 81		10.2	-4.6	---	3
81 - 84		4.9	-5.3	---	4
84 - 87		7.7	-3.7	---	3
87 - 90	25,500	6.8	-7.1	---	5
90 - 93		15.5	-6.5	---	4
93 - 96		9.6	-10.5	---	8
96 - 99	26,000	16.4	-10.5	24.0	5
99 - 102		13.3	-6.8	---	8
102 - 105		13.3	-13.6	---	4
105 - 108		14.8	-3.1	---	5
108 - 111	26,500	10.8	-10.8	---	8
111 - 114	27,000	---	-9.6	---	1
114 - 117	27,500	---	---	---	0
Airplane 351 Traverse 1		Time (EST) 145054 - 145507 Length of traverse 109.5 sec, 38,532 ft Initial heading (deg) 90			
0 - 3	21,000	---	---	---	0
3 - 6		---	---	---	0
6 - 9		3.8	-5.4	15.4	2
9 - 12		7.6	-6.3	---	7
12 - 15		11.1	-10.2	20.7	4
15 - 18		4.8	---	---	1
18 - 21		19.4	-8.9	25.2	4
21 - 24	21,500	35.5	-14.3	---	7
24 - 27	22,500	14.3	-27.3	---	9

TABLE I.- SUMMARY OF GUST MEASUREMENTS -- Continued

Space interval ft x 10 ³	Pressure altitude (ft)	Maximum effective gust velocity $U_{e\max}$ (fps)		Maximum true gust velocity $U_{t\max}$ (fps)		Gust gradient distance (ft)		No. of gusts
August 22, 1946 - Flight 26								
Airplane 351 Traverse 1		Time (EST) ¹⁴⁵⁰⁵⁴ 145054 - ¹⁴⁵²⁴⁵ 145245 Length of traverse 109.5 sec, 38,532 ft Initial heading (deg) 90						
27 - 30	23,000	18.7	-17.1	---	-23.2	---	187	6
30 - 33	23,500	13.3	-13.6	---	-34.3	---	218	4
33 - 36		22.8	-13.6	16.6	---	72	---	6
36 - 39	24,000	6.0	-18.1	---	-19.1	---	192	6
Airplane 351 Traverse 2		Time (EST) ¹⁴⁵²⁵³ 150441 - ¹⁴⁵⁶⁰⁷ 150736 Length of traverse 204.4 sec, 74,628 ft Initial heading (deg) 150						
0 - 3	23,500	---	---	---	---	---	---	0
3 - 6		---	---	---	---	---	---	0
6 - 9		---	---	---	---	---	---	0
9 - 12		7.3	---	---	---	---	---	2
12 - 15	23,000	7.6	+3.2	---	---	---	---	4
15 - 18		7.6	-8.5	9.0	-23.9	201	83	5
18 - 21		7.0	-8.5	---	---	---	---	5
21 - 24		8.2	-2.8	---	---	---	---	3
24 - 27		10.4	---	---	---	---	---	2
27 - 30	23,500	---	-9.5	---	---	---	---	3
30 - 33		6.3	-6.0	---	---	---	---	4
33 - 36		9.2	-7.6	15.9	---	74	---	4
36 - 39		12.0	-5.1	24.1	---	343	---	5
39 - 42		4.1	-9.2	---	-19.1	---	139	3
42 - 45		7.6	-9.2	8.3	-17.6	40	79	4
45 - 48		8.5	-9.5	---	---	---	---	7
48 - 51		9.5	-8.2	---	---	---	---	6
51 - 54		13.3	-10.1	26.1	---	288	---	4
54 - 57		5.7	-8.5	13.4	---	70	---	5
57 - 60		---	-7.0	---	---	---	---	4
60 - 63	23,000	5.7	---	---	---	---	---	1
63 - 66		5.7	-3.8	---	---	---	---	2
66 - 69		---	-4.7	---	---	---	---	1
69 - 72		---	-5.7	---	---	---	---	1
72 - 75		---	---	---	---	---	---	0

TABLE I.- SUMMARY OF GUST MEASUREMENTS - Continued

Space interval ft x 10 ³	Pressure altitude (ft)	Maximum effective gust velocity $U_{e\max}$ (fps)	Maximum true gust velocity $U_{t\max}$ (fps)	Gust gradient distance (ft)	No. of gusts
August 22, 1946 - Flight 26					
Airplane 351 Traverse 3 <div> Time (EST) ¹⁵⁰⁴⁴²150821 - ¹⁵⁰⁷²⁰151113 Length of traverse 177.1 sec, 67,366 ft Initial heading (deg) 150 </div>					
0 - 3	19,500	---	-2.8	---	1
3 - 6		6.6	-5.0	14.1	7
6 - 9		---	-9.4	---	3
9 - 12		5.7	-5.7	10.5	4
12 - 15		5.7	---	---	1
15 - 18		---	-5.7	---	1
18 - 21		---	---	---	0
21 - 24		18.8	-7.5	17.6	7
24 - 27		4.1	-11.3	---	3
27 - 30		23.9	-13.8	16.8	6
30 - 33		11.3	-28.6	---	6
33 - 36		5.7	---	---	1
36 - 39		---	---	---	0
39 - 42		---	---	---	0
42 - 45		---	---	---	0
45 - 48		---	---	---	0
48 - 51		---	---	---	0
51 - 54		---	---	---	0
54 - 57		---	---	---	0
57 - 60		---	---	---	0
60 - 63		---	---	---	0
63 - 66	20,000	---	---	---	0
66 - 69		---	---	---	0
Airplane 351 Traverse 4 <div> Time (EST) ¹⁵⁰⁸²⁰152130 - ¹⁵¹¹⁰⁰152549 Length of traverse 252.7 sec, 90,418 ft Initial heading (deg) 120 </div>					
0 - 3	20,000	---	---	---	0
3 - 6		---	-6.3	---	1
6 - 9		---	-6.3	---	1
9 - 12		3.8	-7.5	---	4

TABLE I.- SUMMARY OF GUST MEASUREMENTS - Continued

Space interval ft x 10 ³	Pressure altitude (ft)	Maximum effective gust velocity U _e max (fps)		Maximum true gust velocity U _t max (fps)		Gust gradient distance (ft)		No. of gusts
August 22, 1946 - Flight 26								
Airplane 351 Traverse 4		Time (EST) 152130 - 152549 Length of traverse 252.7 sec, 90,418 ft Initial heading (deg) 120						
12 - 15	19,500	3.8	-5.6	10.1	-----	36	-----	3
15 - 18		7.8	-6.3	-----	-18.9	-----	67	6
18 - 21		18.5	-12.9	9.2	-----	142	-----	6
21 - 24		8.5	-12.5	-----	-27.6	-----	407	5
24 - 27		11.6	-8.8	15.1	-----	114	-----	6
27 - 30		11.0	-11.9	-----	-----	-----	-----	9
30 - 33		11.0	-13.5	20.6	-----	284	-----	3
33 - 36		12.5	-5.0	25.5	-15.7	120	118	6
36 - 39		5.6	-3.4	8.6	-----	197	-----	5
39 - 42	20,000	11.9	-11.3	15.5	-----	187	-----	4
42 - 45	19,500	12.5	-6.6	-----	-----	-----	-----	5
45 - 48	19,000	12.2	-6.6	19.9	-25.9	109	504	6
48 - 51		15.7	-5.6	29.1	-18.7	110	186	7
51 - 54		15.4	-7.5	10.5	-----	38	-----	7
54 - 57		17.2	-4.1	-----	-----	-----	-----	4
57 - 60		5.0	-11.6	-----	-----	-----	-----	2
60 - 63		7.2	-10.7	-----	-22.7	-----	147	4
63 - 66	19,500	12.2	-9.4	-----	-----	-----	-----	7
66 - 69		15.0	-12.2	20.5	-----	38	-----	6
69 - 72	20,000	8.8	-9.4	-----	-----	-----	-----	7
72 - 75	20,500	13.5	-10.0	-----	-----	-----	-----	4
75 - 78	21,000	9.1	-9.4	-----	-----	-----	-----	8
78 - 81		10.7	-13.5	17.0	-----	175	-----	3
81 - 84	21,500	6.6	-16.3	16.0	-----	153	-----	7
84 - 87		28.2	-25.4	37.8	-----	41	-----	9
87 - 90		8.5	-18.8	-----	-----	-----	-----	8
90 - 93		-----	-----	-----	-----	-----	-----	0

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TABLE I.- SUMMARY OF GUST MEASUREMENTS - Continued

Space interval ft x 10 ³	Pressure altitude (ft)	Maximum effective gust velocity U _{e max} (fps)	Maximum true gust velocity U _{t max} (fps)	Gust gradient distance (ft)	No. of gusts			
August 22, 1946 - Flight 26								
Airplane 351 Traverse 5								
Time (EST) - (c) 152132 - 152548 Length of traverse 280.5 sec, 100,448 ft Initial heading (deg) - (c)								
0 - 3	21,000	10.0	-5.9	13.2	74	1		
3 - 6		6.2	-9.3	17.3	107	8		
6 - 9		16.2	-5.0	37.5	407	4		
9 - 12		12.1	-10.3			4		
12 - 15	21,500	12.1	-8.7			7		
15 - 18		19.3	-10.3			9		
18 - 21	22,000	4.7	-5.9			5		
21 - 24		13.1	-10.0	24.3	107	5		
24 - 27	22,500	5.3	-11.8			4		
27 - 30		9.0	-10.9	10.2	-19.6	142	107	5
30 - 33		5.3	-5.9					3
33 - 36		5.3	-5.9	16.3		108		5
36 - 39		3.7	-7.5	7.8		248		5
39 - 42	22,000	5.0						2
42 - 45		7.5	-5.6	13.3		75		7
45 - 48			-9.3		-17.9		75	2
48 - 51		8.7	-9.3		-10.7		188	4
51 - 54		5.0	-5.6					3
54 - 57		4.0						1
57 - 60		3.7	-5.6	9.5	-18.1	151	112	3
60 - 63			-9.3		-16.7		222	2
63 - 66	22,500							0
66 - 69		7.8	-10.0	12.7	-15.6	36	72	3
69 - 72								0
72 - 75								0
75 - 78								0
78 - 81								0
81 - 84								0
84 - 87		5.6	-3.7	13.0		276		3
87 - 90			-5.6					1
90 - 93	23,000		-7.2		-12.0		239	2

^cNo motion-picture records obtained.

TABLE I.- SUMMARY OF GUST MEASUREMENTS - Continued

Space interval ft x 10 ³	Pressure altitude (ft)	Maximum effective gust velocity $U_{e_{max}}$ (fps)		Maximum true gust velocity $U_{t_{max}}$ (fps)		Gust gradient distance (ft)		No. of gusts
August 22, 1946 - Flight 26								
Airplane 351 Traverse 5		{ Time (EST) - (c) 152132 - 152548 Length of traverse 280.5 sec, 100,448 ft Initial heading (deg) - (c)						
93 - 96	23,000	3.1	-6.5	----	----	----	----	2
96 - 99		----	----	----	----	----	0	
99 - 102		5.6	-4.0	----	----	----	3	
Airplane 345 Traverse 1		{ Time (EST) - (c) Length of traverse 430.9 sec, 142,161 ft Initial heading - (c)						
0 - 3	16,000	----	-2.6	----	----	----	----	2
3 - 6		----	----	----	----	----	1	
6 - 9		----	----	----	----	----	0	
9 - 12		----	----	----	----	----	1	
12 - 15		----	----	----	----	----	0	
15 - 18		----	----	----	----	----	0	
18 - 21		----	----	----	----	----	0	
21 - 24		----	----	----	----	----	0	
24 - 27		----	----	----	----	----	0	
27 - 30		----	----	----	----	----	0	
30 - 33		----	----	----	----	----	0	
33 - 36		----	----	----	----	----	0	
36 - 39		----	----	----	----	----	0	
39 - 42		----	----	----	----	----	0	
42 - 45		----	-2.9	----	----	----	1	
45 - 48		2.6	-3.5	----	----	----	5	
48 - 51		----	----	----	----	----	1	
51 - 54		3.2	----	----	----	----	4	
54 - 57		----	-3.5	----	----	----	2	
57 - 60		----	----	----	----	----	0	
60 - 63		2.9	----	4.2	----	102	3	
63 - 66		----	----	----	----	----	4	
66 - 69		----	----	----	----	----	1	

^cNo motion picture records obtained.

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TABLE I.- SUMMARY OF GUST MEASUREMENTS.- Continued

Space interval ft $\times 10^3$	Pressure altitude (ft)	Maximum effective gust velocity $U_{e\max}$ (fps)	Maximum true gust velocity $U_{t\max}$ (fps)	Gust gradient distance (ft)	No. of gusts
August 22, 1946 - Flight 26					
Airplane 345 Traverse 1		Time (EST) - (c) Length of traverse 430.9 sec, 142,161 ft Initial heading - (c)			
69 - 72	16,000	---	---	---	0
72 - 75		---	---	---	1
75 - 78		2.6	3.3	134	3
78 - 81		---	3.5	---	1
81 - 84		---	---	---	0
84 - 87		---	---	---	1
87 - 90		---	---	---	1
90 - 93		19.2	5.8	---	8
93 - 96		9.3	8.0	---	8
96 - 99		10.9	5.4	174	11
99 - 102		5.4	7.4	---	9
102 - 105	16,500	3.5	3.2	---	6
105 - 108		---	---	---	3
108 - 111		---	3.1	66	1
111 - 114		---	---	---	1
114 - 117		---	4.8	---	5
117 - 120		2.6	6.1	363	1
120 - 123		---	---	---	2
123 - 126		---	---	---	3
126 - 129		11.5	12.2	---	5
129 - 132		20.5	9.9	---	11
132 - 135	17,000	14.1	12.5	---	11
135 - 138		14.1	17.6	95	5
138 - 141		6.7	18.2	---	4
141 - 144		---	---	---	0

^cNo motion-picture records obtained.

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TABLE I.- SUMMARY OF GUST MEASUREMENTS - Continued

Space interval ft $\times 10^3$	Pressure altitude (ft)	Maximum effective gust velocity $U_{e\max}$ (fps)	Maximum true gust velocity $U_{t\max}$ (fps)	Gust gradient distance (ft)	No. of gusts
August 22, 1946 - Flight 26					
Airplane 345 Traverse 2		Time (EST) - (c) Length of traverse 552.8 sec, 186,000 ft Initial heading - (c)			
0 - 3	16,000	----	----	----	0
3 - 6		----	----	----	0
6 - 9		----	----	----	0
9 - 12		----	----	----	0
12 - 15	15,500	----	----	----	0
15 - 18		----	----	----	2
18 - 21		----	----	----	0
21 - 24		----	----	----	0
24 - 27		10.5 -4.4	10.4 -----	164 -----	12
27 - 30		10.5 -9.5	----- -11.2	----- 99	6
30 - 33		6.3 -7.6	-----	-----	8
33 - 36		5.4 -2.9	10.5 -----	227 -----	5
36 - 39		3.8 -4.8	-----	-----	4
39 - 42		-----	-----	-----	0
42 - 45		5.1 -3.5	9.5 -6.1	354 197	2
45 - 48		-----	-----	-----	0
48 - 51		3.2 -----	6.8 -----	95 -----	4
51 - 54		----- -4.8	-----	-----	4
54 - 57		11.4 -5.4	-----	-----	8
57 - 60		10.2 -8.3	-----	-----	9
60 - 63		10.5 -6.0	-----	-----	10
63 - 66		12.1 -8.6	-----	-----	13
66 - 69	16,000	11.7 -7.9	-----	-----	8
69 - 72	16,500	9.8 -20.6	-----	-----	5
72 - 75		20.0 -21.6	-----	-----	9
75 - 78		10.2 -12.7	-----	-----	5
78 - 81	16,000	5.4 -4.8	-----	-----	8
81 - 84		7.3 -7.9	-----	-----	10
84 - 87		12.4 -21.9	-----	-----	6
87 - 90		10.2 -20.6	21.2 -----	133 -----	6
90 - 93		10.8 -7.0	-----	-----	5

^cNo motion-picture records obtained.

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TABLE I.- SUMMARY OF GUST MEASUREMENTS - Continued

Space interval ft x 10 ³	Pressure altitude (ft)	Maximum effective gust velocity $U_{e_{max}}$ (fps)	Maximum true gust velocity $U_{t_{max}}$ (fps)	Gust gradient distance (ft)	No. of gusts
August 22, 1946 - Flight 26					
Airplane 345 Traverse 2		Time (EST) - (c) Length of traverse 552.8 sec, 186,000 ft Initial heading - (c)			
93 - 96	16,000	9.5	-12.4	----	8
96 - 99		14.9	-9.5	----	10
99 - 102	16,500	19.0	-7.6	----	6
102 - 105	17,000	12.7	-29.5	----	8
105 - 108	17,500	8.6	-18.1	----	6
108 - 111	18,000	19.0	-13.6	----	7
111 - 114		6.7	-14.6	22.9	3
114 - 117	17,500	15.2	-6.7	20.1	9
117 - 120		12.7	-13.6	21.7	13
120 - 123		4.4	-6.3	17.0	13
123 - 126	18,000	5.4	-5.4	----	12
126 - 129		13.3	-8.9	----	5
129 - 132		13.6	-13.6	----	6
132 - 135		7.6	-15.2	----	4
135 - 138		----	-7.6	----	7
138 - 141		9.5	-4.1	----	9
141 - 144		7.6	-8.6	----	9
144 - 147		9.2	-8.3	17.7	9
147 - 150		10.8	-11.4	----	4
150 - 153		15.5	-11.7	----	8
153 - 156	17,500	9.2	-11.7	----	8
156 - 159		3.5	-3.2	----	5
159 - 162		4.8	-3.8	----	5
162 - 165		5.4	----	----	3
165 - 168		2.9	----	5.6	4
168 - 171		----	----	----	1
171 - 174		7.0	----	6.8	5
174 - 177		7.0	-7.0	----	12
177 - 180		10.8	-10.8	----	7
180 - 183		11.1	-7.9	10.7	8
183 - 186		8.3	----	8.8	7

^cNo motion-picture records obtained.

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TABLE I.- SUMMARY OF GUST MEASUREMENTS - Continued

Space interval ft x 10 ³	Pressure altitude (ft)	Maximum effective gust velocity $U_{e\max}$ (fps)	Maximum true gust velocity $U_{t\max}$ (fps)	Gust gradient distance (ft)	No. of gusts
August 22, 1946 - Flight 26					
Airplane 345 Traverse 3		Time (EST) - (c) Length of traverse 332.7 sec, 109,628 ft Initial heading - (c)			
0 - 3	16,000	----	-----	----	0
3 - 6		----	-----	----	0
6 - 9		----	-----	----	0
9 - 12		----	-----	----	0
12 - 15		----	-----	----	0
15 - 18		----	-----	----	0
18 - 21		5.6 -9.7	----	----	6
21 - 24		20.4 -10.4	----	----	5
24 - 27	16,500	13.8 -24.2	----	----	9
27 - 30		----- -6.3	----- -6.9	----- 91	6
30 - 33		14.1 -5.0	----	----	9
33 - 36		16.9 -14.8	----	----	5
36 - 39		16.6 -15.4	----	----	12
39 - 42	17,000	19.8 -6.6	----	----	8
42 - 45	17,500	14.1 -12.9	----- -10.6	----- 333	4
45 - 48	18,000	6.9 -17.3	----	----	6
48 - 51	18,500	22.9 -15.7	----	----	6
51 - 54		10.0 -9.4	----	----	7
54 - 57		11.6 -9.7	----	----	9
57 - 60		22.0 -22.3	----	----	5
60 - 63		5.6 -8.2	----	----	4
63 - 66	18,000	5.0 -6.0	18.0 -----	256 -----	6
66 - 69		10.4 -4.4	----	----	7
69 - 72	17,500	12.9 -3.1	----	----	7
72 - 75		9.7 -6.3	----	----	8
75 - 78		10.7 -8.8	10.7 -----	170 -----	7
78 - 81		5.0 -6.0	5.7 -----	97 -----	9
81 - 84		6.0 -8.8	----	----	2
84 - 87		5.3 -7.5	10.8 -14.7	122 30	7
87 - 90	17,000	5.6 -5.3	10.2 -----	293 -----	4
90 - 93		4.7 -6.0	----- -5.5	----- 118	3

^cNo motion-picture records obtained.

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TABLE I.- SUMMARY OF GUST MEASUREMENTS - Continued

Space interval ft x 10 ³	Pressure altitude (ft)	Maximum effective gust velocity $U_{e\max}$ (fps)		Maximum true gust velocity $U_{t\max}$ (fps)		Gust gradient distance (ft)	No. of gusts	
August 22, 1946 - Flight 26								
Airplane 345 Traverse 3		Time (EST) - (c) Length of traverse 332.7 sec, 109,628 ft Initial heading - (c)						
93 - 96	17,000	4.1	-6.0	----	-6.8	----	121	5
96 - 99		6.0	-4.7	12.0	-----	273	----	5
99 - 102		3.1	-2.8	----	-----	----	----	4
102 - 105	16,500	4.4	-----	8.8	-----	228	----	2
105 - 108		-----	-----	-----	-----	----	----	9
108 - 111		-----	-----	-----	-----	----	----	1
Airplane 345 Traverse 4		Time (EST) - (c) Length of traverse 422.6 sec - (d) Initial heading - (c)						
0 - 3	15,500	-----	-----	-----	-----	-----	-----	0
3 - 6		-----	-----	-----	-----	-----	-----	0
6 - 9		-----	-----	-----	-----	-----	-----	0
9 - 12	16,000	-----	-----	-----	-----	-----	-----	0
12 - 15		-----	-----	-----	-----	-----	-----	0
15 - 18		-----	-----	-----	-----	-----	-----	0
18 - 21	15,500	-----	-----	-----	-----	-----	-----	0
21 - 24		-----	-----	-----	-----	-----	-----	0
24 - 27		-----	-----	-----	-----	-----	-----	0
27 - 30		-----	-----	-----	-----	-----	-----	0
30 - 33	16,000	-----	-----	-----	-----	-----	-----	1
33 - 36		2.5	-3.4	-----	-----	-----	-----	5
36 - 39		4.1	-5.9	13.6	-----	183	----	7
39 - 42		4.1	-4.4	-----	-----	-----	-----	8
42 - 45		4.7	-4.4	----	-16.8	----	175	5
45 - 48	16,500	-----	-----	-----	-----	-----	-----	5
48 - 51		-----	-4.1	-----	-----	-----	-----	5
51 - 54	16,000	-----	-3.1	-----	-----	-----	-----	5
54 - 57		3.1	-2.5	-----	-----	-----	-----	5
57 - 60		-----	-----	-----	-----	-----	-----	1

^cNo motion-picture records obtained.

^dFilm supply for airspeed-altitude recorder exhausted before end of traverse.

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TABLE I.- SUMMARY OF GUST MEASUREMENTS - Continued

Space interval ft x 10 ³	Pressure altitude (ft)	Maximum effective gust velocity $U_{e_{max}}$ (fps)	Maximum true gust velocity $U_{t_{max}}$ (fps)	Gust gradient distance (ft)	No. of gusts			
August 22, 1946 - Flight 26								
Airplane 345 Traverse 4		Time (EST) - (c) Length of traverse 422.6 sec - (d) Initial heading - (c)						
60 - 63	16,000	----	----	----	0			
63 - 66		----	-3.1	----	5			
66 - 69		----	----	----	3			
69 - 72		----	----	----	4			
72 - 75		----	----	----	2			
75 - 78		----	----	----	0			
78 - 81		----	----	----	0			
81 - 84		----	----	----	0			
Airplane 331 Traverse 1		Time (EST) 144041 - (a) Length of traverse 519.2 sec, 155,798 ft Initial heading (deg) 10						
0 - 3	10,500	12.9	----	----	-5.4	----	31	4
3 - 6		3.5	----	----	----	----	----	3
6 - 9		----	----	----	----	----	----	0
9 - 12		----	----	----	----	----	----	0
12 - 15		----	----	----	----	----	----	0
15 - 18		3.9	----	----	----	----	----	2
18 - 21		----	----	----	----	----	----	0
21 - 24		----	----	----	----	----	----	0
24 - 27		----	----	----	----	----	----	0
27 - 30		----	----	----	----	----	----	0
30 - 33		----	----	----	----	----	----	0
33 - 36		----	----	----	----	----	----	0
36 - 39		----	----	----	----	----	----	0
39 - 42		----	----	----	----	----	----	0
42 - 45		1.9	----	----	----	----	----	1

^aFilm supply for motion-picture camera exhausted before end of traverse.

^cNo motion-picture records obtained.

^dFilm supply for airspeed-altitude recorder exhausted before end of traverse.

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TABLE I.- SUMMARY OF GUST MEASUREMENTS - Continued

Space interval ft x 10 ³	Pressure altitude (ft)	Maximum effective gust velocity $U_{e\max}$ (fps)		Maximum true gust velocity $U_{t\max}$ (fps)		Gust gradient distance (ft)		No. of gusts
August 22, 1946 - Flight 26								
Airplane 331 Traverse 1		{ Time (EST) 144041 - (a) Length of traverse 519.2 sec, 155,798 ft Initial heading (deg) 10						
45 - 48	10,500	7.7	-6.1	----	-9.9	----	48	10
48 - 51		6.4	-8.0	10.5	-13.4	205	121	4
51 - 54		5.8	-7.7	----	-5.5	----	30	4
54 - 57		3.9	-7.1	6.9	-10.4	115	74	6
57 - 60		----	----	----	----	----	----	0
60 - 63		----	----	----	----	----	----	0
63 - 66		2.6	-2.6	----	----	----	----	5
66 - 69		4.5	-6.1	----	----	----	----	7
69 - 72		8.0	-6.4	----	----	----	----	4
72 - 75		5.6	-6.1	----	----	----	----	3
75 - 78		----	-2.6	----	----	----	----	3
78 - 81		3.9	-1.6	----	----	----	----	4
81 - 84		4.5	----	----	----	----	----	1
84 - 87		3.2	-4.2	----	-9.4	----	92	4
87 - 90		2.6	-1.9	----	----	----	----	3
90 - 93		----	----	----	----	----	----	0
93 - 96		----	----	----	----	----	----	0
96 - 99		----	-1.9	----	----	----	----	3
99 - 102		4.5	----	----	----	----	----	2
102 - 105		4.8	-3.2	----	-9.2	----	118	3
105 - 108		5.1	-1.9	----	-4.0	----	87	2
108 - 111		6.7	-5.1	----	-8.3	----	120	4
111 - 114		11.2	-9.0	----	----	----	----	8
114 - 117		15.4	-9.0	----	----	----	----	6
117 - 120		9.6	-13.5	----	----	----	----	7
120 - 123		4.5	-4.8	5.2	-7.0	121	61	4
123 - 126		----	----	----	----	----	----	0
126 - 129		6.7	-3.2	----	----	----	----	6

^a Film supply for motion-picture camera exhausted before end of traverse.

TABLE I.- SUMMARY OF GUST MEASUREMENTS - Continued

Space interval ft x 10 ³	Pressure altitude (ft)	Maximum effective gust velocity $U_{e_{max}}$ (fps)	Maximum true gust velocity $U_{t_{max}}$ (fps)	Gust gradient distance (ft)	No. of gusts
August 22, 1946 - Flight 26					
Airplane 331 Traverse 1		{ Time (EST) - (a) Length of traverse 519.2 sec, 155,798 ft Initial heading (deg) 10			
129 - 132	10,500	17.0	-9.3	----	7
132 - 135		12.9	-13.8	----	9
135 - 138		9.6	-6.7	----	10
138 - 141		12.9	-4.8	----	10
141 - 144	10,000	6.7	-19.0	-----27.2	4
144 - 147		3.2	-8.7	----	2
147 - 150		16.1	-8.7	----	7
150 - 153		14.1	-10.6	----	6
153 - 156		----	-1.9	----	1
Airplane 331 Traverse 2		{ Time (EST) 145745 - (a) Length of traverse 544.2 sec, 170,871 ft Initial heading (deg) 190			
0 - 3	10,500	----	----	----	0
3 - 6		----	----	----	0
6 - 9		----	----	----	0
9 - 12		----	----	----	0
12 - 15		4.1	-2.9	----	2
15 - 18		8.0	-5.4	----	6
18 - 21		5.4	-9.6	-----24.8	6
21 - 24		8.3	-7.3	----	10
24 - 27		2.9	-11.1	----	8
27 - 30		6.7	-5.7	----	10
30 - 33		16.2	-11.1	----	7
33 - 36		13.1	-5.7	----	5
36 - 39		7.0	-4.1	----	5
39 - 42		5.7	----	----	1
42 - 45		----	-3.2	----	3

^aFilm supply for motion-picture camera exhausted before end of traverse.

TABLE I.- SUMMARY OF GUST MEASUREMENTS - Continued

Space interval ft $\times 10^3$	Pressure altitude (ft)	Maximum effective gust velocity $U_{e\max}$ (fps)	Maximum true gust velocity $U_{t\max}$ (fps)	Gust gradient distance (ft)	No. of gusts
August 22, 1946 - Flight 26					
Airplane 331 Traverse 2 <div> Time (EST) 145745 - (a) Length of traverse 544.2 sec, 170,871 ft Initial heading (deg) 190 </div>					
45 - 48	10,500	3.8	-1.6	---	3
48 - 51		3.2	-4.5	---	3
51 - 54		---	-1.9	---	2
54 - 57		---	---	---	0
57 - 60		---	-1.9	---	2
60 - 63		4.5	-2.5	---	3
63 - 66		12.1	-6.4	9.6	8
66 - 69		6.4	-11.8	---	5
69 - 72		3.2	-5.7	---	5
72 - 75		8.9	-7.0	---	11
75 - 78		19.1	-10.8	---	13
78 - 81		12.1	-15.0	---	11
81 - 84		16.2	-15.6	---	12
84 - 87		22.0	-10.8	---	8
87 - 90		8.3	---	---	3
90 - 93		9.6	-7.6	---	3
93 - 96		11.1	-11.8	---	7
96 - 99		16.9	-15.3	---	9
99 - 102	11,000	6.4	-3.8	---	6
102 - 105		22.6	-22.0	32.9	7
105 - 108		15.0	-9.2	---	9
108 - 111		18.2	-9.6	---	5
111 - 114	12,000	20.1	-5.4	---	7
114 - 117		19.4	-12.7	---	7
117 - 120		---	-9.9	---	3
120 - 123		21.3	-18.5	---	4
123 - 126		6.4	-10.5	---	10
126 - 129		17.5	-4.1	---	11
129 - 132		12.1	-3.8	---	6

^a Film supply for motion-picture camera exhausted before end of traverse.

TABLE I.- SUMMARY OF GUST MEASUREMENTS - Continued

Space interval ft $\times 10^3$	Pressure altitude (ft)	Maximum effective gust velocity $U_{e\max}$ (fps)	Maximum true gust velocity $U_{t\max}$ (fps)	Gust gradient distance (ft)	No. of gusts
August 22, 1946 - Flight 26					
Airplane 331 Traverse 2		Time (EST) 145745 - (a) Length of traverse 544.2 sec, 170,871 ft Initial heading (deg) 190			
132 - 135	12,500	17.2	-16.6	----	10
135 - 138		17.5	-9.6	48.1	6
138 - 141		8.9	-9.9	12.5	7
141 - 144	13,000	16.6	-11.1	----	3
144 - 147	13,500	12.4	-18.5	----	6
147 - 150		8.9	-7.6	----	4
150 - 153	14,000	11.5	-15.6	----	11
153 - 156		14.3	-15.6	----	9
156 - 159		20.4	-8.3	37.1	10
159 - 162	14,500	8.6	-32.2	11.2	9
162 - 165		----	----	----	0
165 - 168		----	----	----	0
168 - 171		----	-3.8	----	1
Airplane 331 Traverse 3		Time (EST) 151357 - (a) Length of traverse - (d) Initial heading (deg) 60			
0 - 3	10,500	6.9	----	----	1
3 - 6	11,000	----	----	----	0
6 - 9		----	----	----	0
9 - 12	10,500	----	----	----	0
12 - 15		----	----	----	0
15 - 18		----	----	----	0
18 - 21		4.1	-3.8	----	5
21 - 24		3.2	-1.9	----	2
24 - 27		----	----	----	0
27 - 30		----	----	----	0
30 - 33		16.1	-8.5	----	8

^aFilm supply for motion-picture camera exhausted before end of traverse.

^dFilm supply for airspeed-altitude recorder exhausted before end of traverse.

TABLE I.- SUMMARY OF GUST MEASUREMENTS - Continued

Space interval ft x 10 ³	Pressure altitude (ft)	Maximum effective gust velocity $U_{e\max}$ (fps)	Maximum true gust velocity $U_{t\max}$ (fps)	Gust gradient distance (ft)	No. of gusts
August 22, 1946 - Flight 26					
Airplane 331 Traverse 3		Time (EST) 151357 - (a) Length of traverse - (d) Initial heading (deg) 60			
33 - 36	10,500	17.7	-10.4	----	9
36 - 39		12.0	-11.0	----	9
39 - 42	11,000	7.9	-7.3	----	8
42 - 45		14.5	-8.8	24.8	5
45 - 48	10,500	21.1	-17.0	----	9
48 - 51		18.9	-9.8	----	7
51 - 54	11,000	19.2	-8.5	----	14
54 - 57	11,500	20.8	-14.2	----	6
57 - 60		18.9	-13.2	----	5
60 - 63		14.2	-16.4	----	9
63 - 66	12,000	15.1	-22.4	----	6
66 - 69	11,500	24.6	-13.9	----	5
69 - 72	12,000	22.7	-26.2	-30.3	7
72 - 75	13,000	6.0	-7.6	----	4
75 - 78		11.3	-10.7	16.1	5
Airplane 347 Traverse 1		Time (EST) - (b) Length of traverse 606.0 sec, 172,582 ft Initial heading (deg) 50			
0 - 3	6,000	2.5	----	----	2
3 - 6		6.2	-6.2	4.3	4
6 - 9		8.1	-11.5	12.2	6
9 - 12		4.4	-4.4	-12.6	6
12 - 15		3.7	-2.8	----	7
15 - 18		2.5	----	----	1
18 - 21		5.3	-1.9	8.5	2
21 - 24		4.7	----	8.9	5

^aFilm supply for motion-picture camera exhausted before end of traverse.^bClock not in field of view of motion-picture camera.^cFilm supply for airspeed-altitude recorder exhausted before end of traverse.

TABLE I.- SUMMARY OF GUST MEASUREMENTS - Continued

Space interval ft x 10 ³	Pressure altitude (ft)	Maximum effective gust velocity $U_{e\max}$ (fps)	Maximum true gust velocity $U_{t\max}$ (fps)	Gust gradient distance (ft)	No. of gusts
August 22, 1946 - Flight 26					
Airplane 347 Traverse 1		Time (EST) - (b) Length of traverse 606.0 sec, 172,582 ft Initial heading (deg) 50			
24 - 27	6,000	1.9	----	----	1
27 - 30		----	-4.4	----	1
30 - 33		----	-2.5	----	4
33 - 36		3.1	-4.4	6.4	2
36 - 39		5.9	-2.2	----	3
39 - 42		2.8	----	----	1
42 - 45		----	----	-3.9	1
45 - 48		1.9	-2.5	3.1	2
48 - 51		----	----	----	0
51 - 54		3.4	----	----	1
54 - 57		1.9	-2.8	3.9	6
57 - 60		4.4	-4.7	----	6
60 - 63		5.0	-2.5	----	5
63 - 66		3.4	-3.1	----	4
66 - 69	5,500	3.1	-2.8	----	4
69 - 72		5.3	-3.4	----	7
72 - 75		4.4	-2.2	3.4	4
75 - 78		----	----	----	0
78 - 81	6,000	----	----	----	0
81 - 84		4.1	----	----	1
84 - 87		----	----	----	0
87 - 90		----	----	----	0
90 - 93		----	----	----	0
93 - 96		----	----	----	0
96 - 99		----	----	----	0
99 - 102		2.8	----	----	3
102 - 105		2.2	----	----	2
105 - 108		----	----	----	0
108 - 111		2.8	----	1.5	3

^bClock not in field of view of motion-picture camera.

TABLE I.- SUMMARY OF GUST MEASUREMENTS - Continued

Space interval ft $\times 10^3$	Pressure altitude (ft)	Maximum effective gust velocity $U_{e\max}$ (fps)	Maximum true gust velocity $U_{t\max}$ (fps)	Gust gradient distance (ft)	No. of gusts		
August 22, 1946 - Flight 26							
Airplane 347 Traverse 1		Time (EST) - (b) Length of traverse 606.0 sec, 172,582 ft Initial heading (deg) 50					
111 - 114	6,000	2.5	-----	-----	-----	1	
114 - 117		-----	-----	-----	-----	0	
117 - 120		8.4	-----	10.7	32	2	
120 - 123		7.2	-10.9	5.9	86	7	
123 - 126		3.4	-4.7	-----	-----	2	
126 - 129		3.4	-4.1	5.0	82	8	
129 - 132		5.9	-6.2	-----	-----	5	
132 - 135		3.4	-3.7	3.1	-5.5	263 86	6
135 - 138		1.6	-3.7	-----	-7.8	177	4
138 - 141		5.3	-----	-----	-4.0	87	3
141 - 144		15.3	-5.9	-----	-----	-----	8
144 - 147		5.0	-11.5	-----	-----	-----	7
147 - 150		9.7	-11.5	-----	-----	-----	11
150 - 153		9.7	-4.4	-----	-----	-----	5
153 - 156	5,500 6,000	10.0	-11.5	15.7	111	8	
156 - 159		3.1	-9.4	-----	-----	6	
159 - 162		15.0	-----	-----	-----	2	
162 - 165		3.1	-----	-----	-----	1	
165 - 168		7.8	-11.9	4.8	121	2	
168 - 171		5.6	-9.4	-----	-----	4	
Airplane 347 Traverse 2		Time (EST) - (b) Length of traverse 535.3 sec, 154,466 ft Initial heading (deg) 190					
0 - 3	6,000	-----	-----	-----	-----	0	
3 - 6		6.4	-4.8	11.0	112	7	
6 - 9		14.3	-6.4	-----	-----	8	
9 - 12		10.2	-9.2	-----	-----	9	
12 - 15		14.3	-10.8	-----	-----	7	

^bClock not in field of view of motion-picture camera.

TABLE I.- SUMMARY OF GUST MEASUREMENTS - Continued

Space interval ft x 10 ³	Pressure altitude (ft)	Maximum effective gust velocity U _{emax} (fps)		Maximum true gust velocity U _{tmax} (fps)		Gust gradient distance (ft)		No. of gusts
August 22, 1946 - Flight 26								
Airplane 347 Traverse 2		Time (EST) - (b) Length of traverse 535.3 sec, 154,466 ft Initial heading (deg) 190						
15 - 18	6,000	4.4	-4.8	----	----	----	----	8
18 - 21		5.1	-6.7	3.7	-6.5	59	58	4
21 - 24		7.0	-----	----	-----	----	-----	4
24 - 27		5.7	-3.2	----	-----	----	-----	3
27 - 30		4.4	-----	----	-----	----	-----	2
30 - 33		-----	-----	----	-----	----	-----	0
33 - 36		-----	-----	----	-----	----	-----	0
36 - 39		4.8	-----	----	-----	-----	----	1
39 - 42		2.2	-----	----	-----	-----	----	1
42 - 45		2.5	-2.2	----	-----	-----	----	2
45 - 48	5,500	3.8	-5.7	5.5	-----	116	-----	3
48 - 51		5.4	-4.8	-----	-5.6	-----	86	5
51 - 54		2.9	-----	----	-----	----	-----	3
54 - 57		4.8	-7.0	----	-----	----	-----	2
57 - 60		15.6	-4.4	----	-----	----	-----	3
60 - 63		2.2	-2.5	----	-----	----	-----	5
63 - 66		4.8	-----	----	-----	-----	----	2
66 - 69		-----	-----	----	-----	-----	----	0
69 - 72		-----	-----	----	-----	-----	----	0
72 - 75		5.1	-----	----	-----	-----	----	2
75 - 78	6,000	5.1	-3.5	----	-----	----	-----	2
78 - 81		-----	-3.2	----	-----	----	-----	2
81 - 84		2.9	-----	----	-----	----	-----	1
84 - 87		2.5	-----	3.1	-----	83	-----	1
87 - 90		12.1	-6.4	6.9	-10.0	111	115	7
90 - 93		11.8	-11.5	----	-----	----	-----	4
93 - 96		6.0	-4.4	----	-----	----	-----	5
96 - 99		5.7	-2.9	----	-9.7	----	236	3
99 - 102		17.1	-13.3	10.2	-----	59	-----	8

^b Clock not in field of view of motion-picture camera.

TABLE I.- SUMMARY OF GUST MEASUREMENTS - Continued

Space interval ft x 10 ³	Pressure altitude (ft)	Maximum effective gust velocity U _{emax} (fps)	Maximum true gust velocity U _{tmax} (fps)	Gust gradient distance (ft)	No. of gusts	
August 22, 1946 - Flight 26						
Airplane 347 Traverse 2		{ Time (EST) - (b) Length of traverse 535.3 sec, 154,466 ft Initial heading (deg) 190				
102 - 105	6,000	9.2	-14.3	4.9	58	6
105 - 108		4.4	-7.3	8.9	114	6
108 - 111		10.5	-6.0			6
111 - 114		14.9	-16.8			5
114 - 117		18.4	-1.6			6
117 - 120	6,500	16.5	-9.5	8.0	29	6
120 - 123		14.0				5
123 - 126			-4.4			1
126 - 129		8.3				2
129 - 132		13.7		8.5	154	2
132 - 135	7,000	12.1	-11.4			8
135 - 138			-7.3	-6.0	117	4
138 - 141		18.4	-3.5	-6.2	87	3
141 - 144		5.4	-3.8			5
144 - 147		14.6	-6.7			6
147 - 150	6,500	5.7	-7.6			7
150 - 153		8.9	-3.5			3
153 - 156		4.4	-6.4			3
Airplane 347 Traverse 3		{ Time (EST) - (b) Length of traverse 386.0 sec, 112,298 ft Initial heading (deg) 90				
0 - 3	6,000					0
3 - 6			-2.5			1
6 - 9		4.3	-4.3			6
9 - 12		9.5	-2.2	4.3	58	4
12 - 15						0
15 - 18		9.2		16.3	85	4

^b Clock not in field of view of motion-picture camera.

TABLE I.- SUMMARY OF GUST MEASUREMENTS - Continued

Space interval ft $\times 10^3$	Pressure altitude (ft)	Maximum effective gust velocity $U_{e\max}$ (fps)	Maximum true gust velocity $U_{t\max}$ (fps)	Gust gradient distance (ft)	No. of gusts
August 22, 1946 - Flight 26					
Airplane 347 Traverse 3		Time (EST) - (b) Length of traverse 386.0 sec, 112,298 ft Initial heading (deg) 90			
18 - 21	6,000	4.3	-----	-----	4
21 - 24	6,500	8.3	-9.5	-14.4	5
24 - 27	6,000	6.2	-9.8	-----	5
27 - 30		13.8	-----	6.8	4
30 - 33		-----	-----	-----	0
33 - 36	6,500	5.2	-----	-----	2
36 - 39	7,000	-----	-7.1	-----	8
39 - 42		5.8	-7.1	-----	5
42 - 45		11.4	-----	-----	1
45 - 48	7,500	-----	-14.5	-27.2	4
48 - 51	8,000	14.1	-6.2	-----	3
51 - 54		13.2	-4.0	10.2	5
54 - 57		8.9	-12.6	-----	6
57 - 60		25.2	-4.9	3.5	5
60 - 63	8,500	11.1	-20.0	-23.4	6
63 - 66	8,000	6.5	-11.1	-----	5
66 - 69		7.4	-----	-----	3
69 - 72		9.8	-6.8	-----	4
72 - 75		-----	-2.5	-----	1
75 - 78		6.5	-4.3	-----	2
78 - 81		4.0	-9.2	-----	3
81 - 84		4.9	-3.4	-----	7
84 - 87		-----	-3.4	-----	11
87 - 90	7,500	5.5	-----	4.3	1
90 - 93		-----	-----	-----	0
93 - 96	7,000	3.7	-----	-1.9	2
96 - 99		-----	-----	-----	0
99 - 102		-----	-----	-----	0
102 - 105	6,500	2.5	-----	-----	1
105 - 108		-----	-----	-----	0
108 - 111		-----	-----	-----	0

^b Clock not in field of view of motion-picture camera.

TABLE I.- SUMMARY OF GUST MEASUREMENTS - Concluded

Space interval ft x 10 ³	Pressure altitude (ft)	Maximum effective gust velocity $U_{e\max}$ (fps)	Maximum true gust velocity $U_{t\max}$ (fps)	Gust gradient distance (ft)	No. of gusts
August 22, 1946 - Flight 26					
Airplane 347 traverse 4		Time (EST) - (c) Length of traverse 212.2 sec - (d) Initial heading - (c)			
0 - 3	6,000	---	----	----	0
3 - 6		2.5	----	----	1
6 - 9		---	----	----	0
9 - 12		---	----	----	0
12 - 15		4.6	-2.5	----	3
15 - 18		14.8	-3.1	----	3
18 - 21		12.6	-6.2	----	7
21 - 24		15.1	-9.2	----	7
24 - 27		5.5	-8.9	----	6

^c No motion-picture records obtained.

^d Film supply for airspeed-altitude recorder exhausted before end of traverse.

NATIONAL ADVISORY
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TABLE II.- SUMMARY OF DRAFT VELOCITY MEASUREMENTS FROM FLIGHTS
OF P-61C AIRPLANES WITHIN THUNDERSTORMS

Date	Flight no.	Air-plane no.	Assigned altitude (ft)	Tra-verse no.	Draft location from cloud entry (ft)		Draft extent (ft)	Average draft velocity (fps)
					Start	End		
8-21-46	25	333	26,000	1	13,512 30,723	26,831 37,292	13,319 6,569	- 9.7 17.5
				2	59,075	65,300	6,225	-17.2
				a ₃				
				a ₄				
		331	21,000	1	59,322 102,200	61,491 115,550	2,169 13,350	25.3 10.0
				a ₁				
		347	16,000	2	13,950	23,500	9,550	32.6
				3	22,224 57,782 99,092 111,200	34,516 68,110 106,787 115,800	12,292 10,328 7,695 4,600	6.5 9.5 12.2 23.8
				4	19,000 40,711	27,200 47,514	8,200 6,803	17.3 -16.4
				1	72,735 83,297	76,064 87,692	3,329 4,395	26.8 11.3
				a ₂				
				3	6,448 82,986	12,172 88,495	5,724 5,509	- 6.7 -22.5
				4	9,378 26,513	15,075 31,659	5,697 5,146	11.5 13.2
		351	11,000	1	72,735 83,297	76,064 87,692	3,329 4,395	26.8 11.3
				a ₂				
		351	11,000	1	72,735 83,297	76,064 87,692	3,329 4,395	26.8 11.3
				a ₂				
		351	11,000	1	72,735 83,297	76,064 87,692	3,329 4,395	26.8 11.3
				a ₂				
		351	11,000	1	72,735 83,297	76,064 87,692	3,329 4,395	26.8 11.3
				a ₂				
8-22-46	26	347	6,000	1	11,728	22,817	11,089	- 8.5
				2	121,101 139,712	133,687 144,167	12,586 4,455	26.0 -66.7

^aNo draft velocities indicated by records.

TABLE II.- SUMMARY OF DRAFT VELOCITY MEASUREMENTS - Continued

Date	Flight no.	Air-plane no.	Assigned altitude (ft)	Tra-verse no.	Draft location from cloud entry (ft)		Draft extent (ft)	Average draft velocity (fps)
					Start	End		
8-22-46	26	347	6,000	a ₃				
				a ₄				
		331	11,000	1	50,676	53,882	3,206	17.2
					117,840	121,260	3,420	-21.9
				2	24,969	30,926	5,957	-16.4
					86,739	89,543	2,804	-36.3
					112,393	119,553	7,160	84.0
					129,495	150,309	20,814	34.2
		345	16,000	3	157,330	159,710	2,380	77.0
					50,736	63,158	12,422	34.6
					68,576	78,849	10,273	58.9
				1	87,000	91,822	4,822	52.0
					86,724	111,169	24,445	10.3
					111,169	115,854	4,685	-15.0
				2	129,400	133,050	8,650	36.1
					56,664	72,300	15,636	18.6
					76,831	81,167	4,336	-33.5
					99,299	111,700	11,401	56.1
				3	136,183	138,678	2,495	-35.9
					159,665	161,979	2,314	30.3
					21,800	47,600	25,800	32.0
		351	21,000	4	32,956	38,500	5,544	22.0
				1	20,350	36,000	15,650	59.4
				2	57,757	65,986	8,229	-17.2
				a ₃				
				4	17,819	25,642	7,823	-15.1
					25,642	50,847	25,205	30.3

^aNo draft velocities indicated by records.

TABLE II.- SUMMARY OF DRAFT VELOCITY MEASUREMENTS - Concluded

Date	Flight no.	Air-plane no.	Assigned altitude (ft)	Tra-verse no.	Draft location from cloud entry (ft)		Draft extent (ft)	Average draft velocity (fps)
					Start	End		
8-22 46	26	351	21,000	5	10,617	29,535	18,918	29.4
					42,259	54,692	9,433	- 6.4
		333	26,000	1	18,478	23,277	4,799	13.3
					25,757	35,766	10,009	26.2
					54,693	59,795	5,102	20.2
				2	13,053	23,658	10,605	-16.9
					41,108	48,420	7,312	21.1
					53,253	63,842	10,589	22.1
				3	18,916	39,117	20,201	65.6
					41,115	50,798	9,683	-46.2
					50,798	56,441	5,643	29.0
					62,752	78,271	15,519	-30.8
					78,271	93,031	14,760	9.9
					93,031	102,267	9,236	-17.5
				4	12,667	19,314	6,647	-16.4
					34,467	43,147	8,680	15.0
					58,360	80,445	22,085	-18.1
					80,445	102,570	22,125	22.1

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TABLE III. SUMMARY OF MEASUREMENTS OF AMBIENT

AIR TEMPERATURE WITHIN THUNDERSTORMS

Date	Flight no.	Airplane no.	Traverse no.	Time (EST)	Distance from cloud entry (ft)	Milliammeter reading
8-21-46	26	351	2	150441	0	99
				150530	17,075	98
				150600	29,100	98
				150630	40,500	99
				150700	51,750	99
				150730	60,250	106
			3	150821	0	110
				150900	15,250	110
				150930	27,500	107
				151000	39,750	103
				151030	51,200	105
				151100	61,500	100
			4	152130	0	110
				152200	10,000	115
				152230	20,000	116
				152300	31,250	120
				152330	42,900	120
				152400	53,700	120
				152430	54,500	120
				152500	75,200	120
				152530	85,500	124
			1	144041	0	120
				144130	14,700	115
				144200	24,000	110
				144230	33,300	110
				144300	42,800	110
				144330	51,800	120
				144400	60,750	120
				144430	69,800	120
				144500	78,600	130
				144530	87,750	125
				144600	96,600	120
				144630	105,500	125
				144700	114,250	150
				144730	123,250	150
				144740	126,250	150

TABLE III.- SUMMARY OF MEASUREMENTS - Concluded

Date	Flight no.	Airplane no.	Traverse no.	Time (EST)	Distance from cloud entry (ft)	Milliammeter reading
8-21-46	26	331	2	145745	0	295
				145830	14,200	300
				145700	23,600	320
				145930	33,200	320
				150000	42,300	340
				150030	51,100	350
				150100	60,200	360
				150130	69,200	360
				150200	78,250	350
				150230	87,750	360
				150300	97,200	380
				150330	106,200	330
				150345	110,800	320
				150400	116,300	340
				150430	125,750	370
				150440	128,900	370
	27	331	3	151357	0	320
				151430	10,500	315
				151500	20,100	300
				151530	29,700	300
				151600	39,200	320
				151630	48,300	315
				151700	57,800	320
				151730	67,100	335
				151800	76,200	375

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